

AERA 2004 Documentary Account
Student Outcomes as Reported by Schools Attuned Participants:
Individual and Whole Classroom Effects

ABSTRACT

Schools Attuned is a professional development program designed to improve educators' abilities to help students with differences in learning find success in school. The purpose this investigation was to examine the student outcomes that educators reported as a result of their use of Schools Attuned. In addition, we explored how those reported outcomes varied according to student variables and educator experience. Results of a cross-sectional survey study indicated that educators saw improvements in students' academic, social, behavioral, and affective outcomes. In addition, certain reported student outcomes differed based on student characteristics and educator experience. Lastly, educators who reported successful outcomes for an individual student were more likely to report positive outcomes for their whole class. The results of this investigation provide insight into the outcomes of a professional development program and identify trends that should be further investigated through independent research.

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STATEMENT OF SIGNIFICANCE

This documentary account presents an examination of student outcomes that educators report as a result of their use of strategies and concepts gained through a professional development program, and an exploration of how those reported outcomes vary according to student and educator variables.

Policy makers have begun articulating the role that ongoing professional development is expected to serve in preparing our nation's teachers for an increasingly diverse student population. The assumption is that when teachers participate in *high quality* professional development, they will then effectively implement the strategies and techniques they have learned back in their own classrooms, resulting in improved student outcomes. Program developers and school administrators are invested in the role that professional development must play in impacting teachers' classroom instruction and leading to improved student outcomes; education researchers are concerned with the forces that can influence a teacher's use of professional development experiences and his/her perceptions of the outcomes of that use on students. Results of this account will be relevant to those interested in the issue of teacher development, particularly in the impact of professional development on teacher practices, and subsequent improvements in student outcomes. The present account provides detailed information on student outcomes that educators report as a result of their use of professional development learning. These findings may provide a direction for future empirical research on the topic.

BACKGROUND

Schools Attuned is a professional development program designed to improve educators' ability to help students with differences in learning find

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success in school. This program was developed by All Kinds of Minds, a non-profit organization that has created a variety of programs based upon a neurodevelopmental approach to learning (Levine, 1998, 2000). This approach involves understanding brain functions that affect the ways a student learns and performs in school and applying that knowledge to assessment and instructional practice.

The goals of the Schools Attuned program are to strengthen educators' understanding and management of differences in learning, help educators to help students become aware of their own learning profiles and improve their academic and social achievement, and create schools that respect differences in learning and nurture strengths in students. The Schools Attuned professional development program was designed using principles that reflect standards of the National Staff Development Council and current research on adult learning (Borasi & Fonzi (National Science Foundation), 2002; Laine & Otto (NCREL), 2000; Little, 1993; Rogers, 2002; Bransford, et al. (National Research Council), 2000). The program design was guided by the need to develop content and instructional techniques that respect and use educators' wisdom of professional practice; ensure that educators are actively engaged in learning new content; develop reflection and other professional practices; and provide for classroom-based follow up opportunities.

The Schools Attuned program provides a minimum of 35 instructional hours (Core Course) plus a minimum of 10 contact hours for follow-up experiences (Practicum). The Schools Attuned Program addresses eight neurodevelopmental constructs and provides practice with the Schools Attuned processes. As a preparatory activity for Schools Attuned, participants select a student of their own whom they identify as struggling with learning. Participants gather observational data and work samples to bring to the program. The student becomes the participant's case student throughout the Schools Attuned training. The Schools Attuned program contains the following elements: (1) content based a neurodevelopmental approach to learning presented through the

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Developing Minds Video Library, (2) readings from books and articles by Dr. Levine and others, (3) small group work to provide for active assimilation of content and practice of skills, (4) case studies/vignettes to help participants understand the constructs, (5) demonstration and practice sessions to provide opportunities to use complex information and processes simultaneously and fluidly, (6) application of these processes to participants' own case student or to a complex case student provided to them, (7) preparation for implementing Schools Attuned in the school setting, including management strategies, and (8) practicum experiences offered during the school year to help support implementation of Schools Attuned.

The skills learned in Schools Attuned include the seven-step process of Attuning a Student. The process of Attuning a Student provides tools and methods to help teachers, students, and their parents understand how students' neurodevelopmental differences can affect their learning, particularly in school. Students, their parents, and educators are collaborators both in gathering information about students' learning and in planning to manage their school experiences to maximize success and minimize failure. This collaboration forges a sense of alliance and breeds optimism about the future. Together, through a process called "demystification," these team members share an understanding of the underlying neurodevelopmental functions that may be affecting a student's learning, both positively and negatively. This understanding enables them to shed preconceptions, and even misconceptions, about the student as a learner and to plan for and implement strategies that address his/her strengths and weaknesses to improve learning.

Attuning a Student consists of seven major stages: Noticing a Student, Data Collection, Data Analysis, Profile Building, Linking the Profile to School Performance, Developing a Management by Profile Plan, and Implementing the Management by Profile Plan.

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CONTEXT

Program evaluation is an important component of a professional development program. Extensive work by Guskey on how best to evaluate the impact of professional development has resulted in a framework of five critical levels of program evaluation (1995, 2000, 2002). The framework begins with the levels of: (1) measuring participants' reactions to the professional development experience, (2) participants' acquisition of new knowledge and skills, and (3) examining changes in the organization, procedures, and climate of schools due to the innovation. Guskey's fourth level of evaluation involves the assessment of participants' use of the knowledge and skills they have gained. For example, how are teachers implementing what they have learned? How did the professional development activity relate to change in instructional practice? The fifth level of evaluation involves the impact of professional development on student outcomes, what Guskey refers to as "the bottom line".

Each of these five levels is important to providing data on the quality and impact of a professional development program. During the Schools Attuned Core Course and Practicum, All Kinds of Minds uses daily written reflections, survey questionnaires, and portfolio documentation to gather evidence of participant reaction to the course and its facilitators, to assess the knowledge and skills that participants gained as a result of the program, and to gather educator reports on the impact of Schools Attuned at the individual student, whole classroom, and school wide levels. The results of these analyses inform the content, format, and organization of the Schools Attuned Program. In addition, this program evaluation identifies trends that may then be further investigated through independent impact research.

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METHODS

The present documentary account is based on results of a cross-sectional survey investigation. This investigation was conducted as one activity within the Schools Attuned Program Evaluation agenda. The purpose of the present activity was to examine the student outcomes that educators report as a result of their use of Schools Attuned. In addition, we explored how those reported outcomes varied according to student variables and educator experience.

Instrument

The *Schools Attuned End-of-Program Participant Survey* was used to gather data for this analysis. The purposes of this survey were to collect information on (1) how participants have implemented Schools Attuned strategies and concepts in their classrooms and (2) their perceptions of the outcomes of that implementation on students, themselves, and their schools. The survey was distributed after participants had completed their final Practicum session, which was 9-12 months after their initial Core Course training.

Educators may implement the Schools Attuned program in one of three ways: (1) implementing the Attuning a student process with an individual student; (2) using Schools Attuned strategies in whole classroom instruction; or (3) both individual and whole classroom use. Therefore, the *End-of-Program Survey* gathers detailed information on teachers' implementation with individual students (and their reported outcomes of that use), as well as teachers' implementation and reported outcomes of use with the whole classroom.

Sample and Data Collection Procedures

Respondents included teachers, administrators and related service professionals who had completed the Schools Attuned program in Oklahoma and

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North Carolina. Participants attended the Core Course phase of the program between the period of February and August 2002. Practicum sessions began in September 2002, and participants completed their final Practicum session between the period of March and June 2003.

Surveys were mailed during the second week of June 2003. A total of 317 surveys were sent: 81 to participants in North Carolina, 236 to participants in Oklahoma. During the second week of July, the initial rate of response was 41%. A follow-up mailing was sent during the third week of July in an attempt to increase the final response rate. From this follow-up mailing, a final response rate of 60% was obtained (48 out of 81 participants in North Carolina, 144 out of 236 participants in Oklahoma). Results obtained from the follow-up mailing were explored both independently and in conjunction with the data obtained from the first mailing.

Survey respondents included teachers, administrators, related service professionals, and respondents indicating “other”. Because the focus of the investigation was specific to classroom practices, we were most interested in the responses of teachers. We therefore excluded administrators, related service professionals, and respondents indicating “other” from analyses. Of the 145 remaining respondents, 19 indicated not completing the final stage of Attuning the Student, which is Implementation. Because the focus of this investigation was on the impact of participants’ implementation, these respondents were also excluded from the analyses. The final sample consisted of 126 teachers.

Research Questions

The questions of interest in this investigation were:

- (1) What individual student outcomes do educators report as a result of the Attuning a Student process?

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- (2) What whole classroom outcomes do educators report as a result of the use of Schools Attuned methods and strategies?
- (3) How do reported individual student outcomes differ based on student special education eligibility, grade level, socioeconomic status, gender, and race?
- (4) How do reported individual and whole classroom student outcomes differ based on educator years of experience?

Data Analysis and Results

In this investigation we were interested in examining educators' reports of improvement in student outcomes as a result of participant use of the Schools Attuned program. Student outcomes included academic, behavioral, social, and affective variables. First, we examined the frequencies with which respondents reported improvements for students at the individual and whole classroom level. Next, we examined differences in reported outcomes across five student variables- special education eligibility, grade level, socioeconomic status, gender, and race, and one educator variable- years of experience. Finally, we explored the relationship between outcomes reported for individual students with outcomes reported at the whole classroom level. All analyses were conducted using the SPSS 11.5 statistical package. The results for each of these analyses are presented below.

Individual Student Outcomes

Respondents reported on outcomes for individual students with whom they had completed the Attuning a Student process. Over half the respondents (n=126) indicated individual student improvements in each of the following areas: improved self-concept (78.6%), improved course grades (67.5%), improved student-teacher interactions (63.5%), improved motivation (59.5%), and

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improved attitude toward school (54.8%). Improvements were also reported for several other areas of student outcomes, although half or less of the respondents indicated this type of improvement: improved social interactions (50.0%), improved parent-teacher interactions (48.4%), improved student behavior (42.9%), and improved standardized test scores (25.4%).

Outcomes across Student Variables

We investigated differences in individual student outcomes on the respondents' reports based on several student characteristics. We produced crosstabulations and chi-squares to examine student outcomes across special education eligibility, student grade level, student gender, socioeconomic status, and race. Statistically significant differences were found for the student outcome of improved standardized tests across special education eligibility (37.8% of students eligible for special education and 18.8% of students not eligible for special education, $\chi = 5.48$, $df = 1$, $p = .03$) and across student grade level (30.8% of students in grades K-5 and 11.8% of students in grades 6-12, $\chi = 4.69$, $df = 1$, $p = .04$). Statistically significant differences were also found for the student outcome of improved behavior across socioeconomic status (59.6% of students participating in free/reduced lunch program and 35.8% of students not participating in free/reduced lunch program, $\chi = 6.28$, $df = 1$, $p = .01$). No statistically significant differences ($p < .05$) were found for any of the other student outcomes based on special education eligibility, student grade level, or socioeconomic status. Nor were any statistically significant differences ($p < .05$) were found for any student outcomes based on student gender or race.

Outcomes across Educator Years of Experience

To explore differences in reported student outcomes based on educator years of experience, we grouped teachers into two categories: those with 10 or

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less years experience and those with more than 10 years of experience. Across educators' years of experience, statistically significant differences were found for the individual student outcomes of improved standardized tests (54.1% reported by educators with 10 or less years experience and 13.6% reported for educators with more than 10 years experience, $x = 22.34$, $df = 1$, $p = .00$) and student motivation (45.9% reported by educators with 10 or less years experience and 65.9% reported for educators with more than 10 years experience, $x = 4.33$, $df = 1$, $p = .05$).

Whole Classroom Effects

Over half the 126 respondents indicated improvements for their whole classroom in each of the following areas: improved self-concept (81.7%), improved student-teacher interactions (76.2%), improved motivation (72.2%), improved attitude toward school (70.6%), improved course grades (69.8%), improved parent-teacher interactions (61.9%), improved student behavior (60.3%), and improved social interactions (57.1%). Improvements were also reported for another classroom outcome, although less than half of the respondents indicated this type of improvement: improved standardized test scores (32.5%).

As with individual student outcomes, we examined differences in outcomes reported for the whole classroom based on educators' years of experience. Statistically significant differences were for the whole classroom outcome of improved standardized tests (58.3% reported by educators with 10 or less years experience and 22.7% reported for educators with more than 10 years experience, $x = 14.64$, $df = 1$, $p = .00$). No statistically significant differences ($p < .05$) were found for any of the other whole classroom outcomes based on educators' years of experience.

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Individual Student Outcomes and Whole Classroom Effects

We were also interested in examining if educators who reported improvements in individual students' academic, behavioral, social, and affective outcomes would also report similar improvements at the whole classroom level. A series of crosstabulations were conducted and the results indicated that for almost all student outcome variables a considerable percentage of the educators who reported individual student improvements also indicated whole class improvements. Teachers who reported individual student improvements also reported improvements across the whole classroom for: improved self-concept (83.1%), improved student-teacher interactions (77.4%), improved motivation (73.4%), improved attitude toward school (71.8%), improved course grades (71.0%), improved parent-teacher interactions (62.9%), improved behavior (61.3%), and improved social interactions (58.1%). Only on the outcome of improved standardized test scores did less than half of those educators who reported individual student improvements also report whole class improvements (33.1%).

CONCLUSIONS AND IMPLICATIONS

Results of the present cross-sectional survey study indicate that educators saw improvements in students' academic, social, behavioral, and affective outcomes. The results of this evaluation provide support for the approach and identify trends that should be further investigated through independent impact research.

For both the individual student as well as at the whole classroom level, improved self-concept was the most frequently reported outcome, followed by improved student-teacher interactions and improved course grades. Improved student motivation and attitude toward school were also reported by more than

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half the respondents for both individual and whole classroom effects. An improvement in standardized test scores was the one student outcome reported by less than half the respondents at both the individual and whole classroom level. The time span between initial training and data collection was relatively short in this study (from 10 to 17 months). It could be informative to follow-up with these respondents and students in future research to assess the degree to which reported student improvements are sustained over time.

In general, reported improvements were consistent across various student characteristics as well as across educator years of experience. Across student gender and race, there were no significant differences in student outcomes reported. Across other student characteristics, teachers reported significantly more improvements in behavior for those students who received free/reduced lunch compared to those who did not, as well as significantly more improvements in standardized test scores for both students eligible for special education and students in grades K-5. Improved standardized test scores were also reported differently across educators. Those with 10 or less years of experience reported significantly more students with improved standardized test scores. An important aspect of a professional development program's replicability is the degree to which the program can work effectively across different students and educators. The analyses in this study suggest that the Schools Attuned program can result in improvements for many different types of students across several student outcomes. Moreover, the majority of these improvements were reported consistently across more and less experienced teachers. Interestingly, teachers with less experience tended to report improved standardized test scores more frequently than their peers with more than 10 years experience. Reported improvements in standardized test scores also differed across two of the student variables. The variation in reports of improved standardized test scores may be further explored in a more rigorous future study.

Lastly, educators who reported successful outcomes for an individual student were also likely to report positive outcomes for their whole class following

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use of Schools Attuned. This was particularly true for improvements in affective and behavioral variables, including student self-concept, student-teacher interactions, student motivation and attitude toward school. The relationship between a teacher's use of Schools Attuned with an individual student and the potential effect on whole classroom outcomes is an area for further exploration in future research studies.

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References

- Borasi, R. & Fonzi, J. (2002). *Foundations (vol. 3): Professional Development That Supports School Mathematics Reform*. National Science Foundation.
- Bransford, J. D. et al. [National Research Council] (2000). *How People Learn: Brain, Mind, Experience, and School*. National Academy Press: Washington, D.C.
- Guskey, T. R. (1995). *Professional Development in Education: New Paradigms and Practices*. Teachers College Press: New York.
- Guskey, T. R. (2000). *Evaluating Professional Development*. Corwin Press: Thousand Oaks, CA.
- Guskey, T. R. (2002). Does it make a difference? Evaluating professional development. *Educational Leadership*, March, 45-51.
- Laine, S. W. & Otto, C. (2000). *Professional Development in Education and the Private Sector: Following the Leaders*. North Central Regional Educational Laboratory.
- Levine, M. D. (1998). *Developmental Variation and Learning Disorders*, 2nd ed. Educators Publishing Service: Cambridge, MA.
- Levine, M. D. (2000). *Educational Care: A System for Understanding and Helping Children with Learning Problems at Home and at School*, 2nd ed. Educators Publishing Service: Cambridge, MA.
- Little, J. W. (1993). Teachers' professional development in a climate of educational reform. *Educational Evaluation and Policy Analysis*, 15 (2), 129-151.
- Rogers, C. R. (2002). Voices inside schools- Seeing student learning: Teacher change and the role of reflection. *Harvard Educational Review*, 72 (2), 230-253.